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(Reaffirmed 2002)

Indian Standard

SPECIFICATION FOR
HIGH PRESSURE MERCURY VAPOUR LAMPS

PART II STANDARD LAMP DATA SHEETS

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Indian Standard

SPECIFICATION FOR HIGH PRESSURE MERCURY VAPOUR LAMPS

PART II STANDARD LAMP DATA SHEETS

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Indian Standard
**SPECIFICATION FOR
HIGH PRESSURE MERCURY VAPOUR LAMPS
PART II STANDARD LAMP DATA SHEETS**

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 28 July 1981, after the draft finalized by the Electric Lamps and Accessories Sectional Committee had been approved by the Electrotechnical Division Council.

0.2 As a first step towards standardization of high pressure mercury vapour lamps, a schedule covering dimensions and some of the essential characteristics of HPMV lamps (IS : 2183) was first published in 1963 and subsequently revised in 1973. A standard containing methods of tests for HPMV lamps (IS : 7023) was published in 1973. It has now been possible to evolve a more detailed specification covering standard types of HPMV lamps and methods of tests to be used for determining their electrical characteristics.

0.3 This standard (Part II) is one of the series of Indian Standards which deals with high pressure mercury vapour lamps.

This series will have the following four parts:

- | | |
|----------|---|
| Part I | Requirements and tests |
| Part II | Standard lamp data sheets |
| Part III | Dimensions of lamp caps |
| Part IV | 'GO' and 'NO - GO' gauges of lamp caps. |

This series of Indian Standards, therefore, in due course when all parts are published, will supersede IS : 2183-1973 'Schedule for high pressure mercury vapour lamps' and IS : 7023-1973 'Methods of tests for high pressure mercury vapour lamps'.

0.4 This standard (Part II) includes a series of standard data sheets, each one giving the characteristics of a specific lamp type covered by the standard.

0.5 This standard (Part II) shall be read in conjunction with the Part I, III and IV of this standard.

0.6 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test, shall be rounded off in accordance with IS : 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard (Part II) comprises of lamp data sheets for high pressure mercury vapour lamps.

1.2 The specific lamp types are given in 3.2.

2. TERMINOLOGY

2.1 For the purpose of this standard, the definitions given in Part I of this standard shall apply.

3. GENERAL PRINCIPLE IN PRESENTATION OF DATA SHEETS

3.1 Numbering of Data Sheets — The technical data sheets are numbered as follows:

First number — Number of this standard.

Second number — Number of the sheet allocated in order of publication of the sheet.

Third number — Number of issue of the sheet, that is,

1 = first issue, 2 = second issue, etc.

3.2 List of standard lamp data sheets:

<i>Wattage (W)</i>	<i>Cap</i>	<i>Sheet Number</i>
80	E27; B22d-3	9900-1-1
125	E27; B22d-3	9900-2-1
250	E40	9900-3-1
400	E40	9900-4-1
700	E40	9900-5-1
1 000	E40	9900-6-1

*Rules for rounding off numerical values (revised).

4. DIAGRAMMATIC REPRESENTATION FOR LOCATION OF LAMP DIMENSIONS

4.1 Figure 1 is intended only to indicate dimensions to be controlled and is to be used in conjunction with the relevant lamp data sheets.

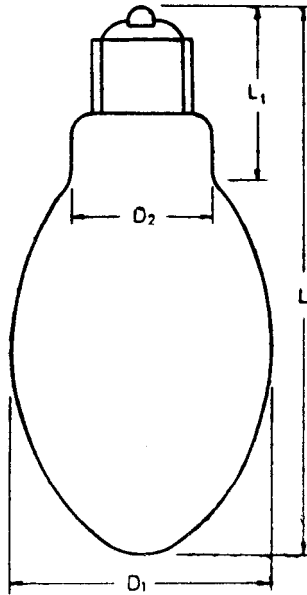


FIG. 1 SCHEMATIC DIAGRAM OF HIGH PRESSURE MERCURY VAPOUR LAMPS

HIGH PRESSURE MERCURY VAPOUR LAMP DATA SHEET NO. 9900-1-1
RATED WATTAGE 80 W

STARTING AND OPERATING CHARACTERISTICS

(1)	OBJECTIVE (2)	MINIMUM (3)	MAXIMUM (4)
Lamp starting voltage (V)	—	—	180
Warm up lamp current (A)	0.72	—	—
Warm up voltage at lamp terminals (V)	—	85	—
Warm up time (minutes)	—	—	12
Minimum voltage for stable operation (W)	—	198	—
Lamp wattage (W)	80	—	84
Voltage at lamp terminals (V)	115	100	130
Lamp current (A)	0.80	—	—

REFERENCE BALLAST CHARACTERISTICS

Rated frequency (Hz)	50
Rated voltage (V)	220
Calibration current (A)	0.80
Voltage current ratio	206 ± 0.5 percent
Power factor	0.075 ± 0.005

DIMENSIONS

(All dimensions in millimetres)

OVERALL LENGTH (Max) <i>L</i>	BULB DIAMETER (Max) <i>D</i>	NECK DIAMETER (Max) <i>D2</i>	NECK LENGTH (Min) <i>L₁</i>	
(1)	(2)	(3)	E27 Cap (4)	B22 Cap (5)
166.5	81.0	40.0	39.5	39.5

LUMINOUS FLUX

BULB FINISH (1)	RATED LUMINOUS FLUX (Lumens) (2)
--------------------	--

Fluorescent coated	3 400
Clear	3 100

HIGH PRESSURE MERCURY VAPOUR LAMP DATA SHEET NO. 9900-2-1
RATED WATTAGE 125 W

STARTING AND OPERATING CHARACTERISTICS

(1)	OBJECTIVE (2)	MINIMUM (3)	MAXIMUM (4)
Lamp starting voltage (V)	—	—	180
Warm up lamp current (A)	1.04	—	—
Warm up voltage at lamp terminals (V)	—	93	—
Warm up time (minutes)	—	—	12
Minimum voltage for stable operation (V)	—	198	—
Lamp wattage (W)	125	—	132
Voltage at lamp terminals (V)	125	110	140
Lamp current (A)	1.15	—	—

REFERENCE BALLAST CHARACTERISTICS

Rated frequency (Hz)	50
Rated voltage (V)	220
Calibration current (A)	1.15
Voltage current ratio	134 ± 0.5 percent
Power factor	0.075 ± 0.005

DIMENSIONS

(All dimensions in millimetres)

OVERALL LENGTH (Max) <i>L</i>	BULB DIAMETER (Max) <i>D</i> ₁	NECK DIAMETER (Max) <i>D</i> ₂	NECK LENGTH (Min) <i>L</i> ₁	
			E27 Cap	B22 Cap
(1)	(2)	(3)	(4)	(5)
185.5	91.0	43.0	47.5	47.5

LUMINOUS FLUX

BULB FINISH	RATED LUMINOUS FLUX (Lumens)
(1)	(2)
Fluorescent coated	6 200
Clear	5 450

HIGH PRESSURE MERCURY VAPOUR LAMP DATA SHEET NO. 9900-3-1
RATED WATTAGE 250 W

STARTING AND OPERATING CHARACTERISTICS

	OBJECTIVE	MINIMUM	MAXIMUM
(1)	(2)	(3)	(4)
Lamp starting voltage (V)	—	—	180
Warm up lamp current (A)	1.94	—	—
Warm up voltage at lamp terminals (V)	—	98	—
Warm up time (minutes)	—	—	12
Minimum voltage for stable operation (V)	—	198	—
Lamp wattage (W)	250	—	263
Voltage at lamp terminals (V)	130	115	145
Lamp current (A)	2.13	—	—

REFERENCE BALLAST CHARACTERISTICS

Rated frequency (Hz)	50
Rated voltage (V)	220
Calibration current (A)	2.15
Voltage current ratio	71 ± 0.5 percent
Power factor	0.075 ± 0.005

DIMENSIONS

(All dimensions in millimetres)

OVERALL LENGTH	BULB DIAMETER	NECK DIAMETER	NECK LENGTH (E40 Cap)
(Max)	(Max)	(Max)	(Min)
L	D ₁	D ₂	L ₁
(1)	(2)	(3)	(4)
227.0	91.0	53.0	60.0

LUMINOUS FLUX

BULB FINISH	RATED LUMINOUS FLUX (Lumens)
(1)	(2)
Fluorescent coated	12 750
Clear	11 300

HIGH PRESSURE MERCURY VAPOUR LAMP DATA SHEET NO. 9900-4-1
RATED WATTAGE 400 W

STARTING AND OPERATING CHARACTERISTICS

	OBJECTIVE	MINIMUM	MAXIMUM
(1)	(2)	(3)	(4)
Lamp starting voltage (V)	—	—	180
Warm up lamp current (A)	2.93	—	—
Warm up voltage at lamp terminals (V)	—	102	—
Warm up time (minutes)	—	—	12
Minimum voltage for stable operation (V)	—	198	—
Lamp wattage (W)	400	—	420
Voltage at lamp terminals (V)	135	120	150
Lamp current (A)	3.25	—	—

REFERENCE BALLAST CHARACTERISTICS

Rated frequency (Hz)	50
Rated voltage (V)	220
Calibration current (A)	3.25
Voltage current ratio	45 ± 0.5 percent
Power factor	0.075 ± 0.005

DIMENSIONS

(All dimensions in millimetres)

OVERALL LENGTH (Max) <i>L</i>	BULB DIAMETER (Max) <i>D₁</i>	NECK DIAMETER (Max) <i>D₂</i>	NECK LENGTH (Min) <i>L₁</i>
(1)	(2)	(3)	(4)
292.0	122.0	58.0	60.0

LUMINOUS FLUX

BULB FINISH	RATED LUMINOUS FLUX (Lumens)
(1)	(2)
Fluorescent coated	22 750
Clear	20 500

IS : 9900 (Part II) - 1981**HIGH PRESSURE MERCURY VAPOUR LAMP DATA SHEET NO. 9900-5-1
RATED WATTAGE 700 W****STARTING AND OPERATING CHARACTERISTICS**

	OBJECTIVE	MINIMUM	MAXIMUM
(1)	(2)	(3)	(4)
Lamp starting voltage (V)	—	—	180
Warm up lamp current (A)	4.90	—	—
Warm up voltage at lamp terminals (V)	—	106	—
Warm up time (minutes)	—	—	12
Minimum voltage for stable operation (V)	—	198	—
Lamp wattage (W)	700	—	735
Voltage at lamp terminals (V)	140	125	155
Lamp current (A)	5.40	—	—

REFERENCE BALLAST CHARACTERISTICS

Rated frequency (Hz)	50
Rated voltage (V)	220
Calibration current (A)	5.45
Voltage current ratio	26.7 ± 0.5 percent
Power factor	0.04 ± 0.002

DIMENSIONS

(All dimensions in millimetres)

OVERALL LENGTH	BULB DIAMETER	NECK DIAMETER	NECK LENGTH (E40 Cap)
(Max) <i>L</i>	(Max) <i>D₁</i>	(Max) <i>D₂</i>	(Min) <i>L₁</i>
(1)	(2)	(3)	(4)
368.0	152.0	66.0	60.0

LUMINOUS FLUX

BULB FINISH	RATED LUMINOUS FLUX (Lumens)
(1)	(2)
Fluorescent coated	37 000
Clear	33 500

HIGH PRESSURE MERCURY VAPOUR LAMP DATA SHEET NO. 9900-6-1
RATED WATTAGE 1 000 W

STARTING AND OPERATING CHARACTERISTICS

	OBJECTIVE	MINIMUM	MAXIMUM
(1)	(2)	(3)	(4)
Lamp starting voltage (V)	—	—	180
Warm up lamp current (A)	6.75	—	—
Warm up voltage at lamp terminals (V)	—	110	—
Warm up time (minutes)	—	—	12
Minimum voltage for stable operation (V)	—	198	—
Lamp wattage (W)	1 000	—	1 050
Voltage at lamp terminals (V)	145	130	160
Lamp current (A)	7.5	—	—

REFERENCE BALLAST CHARACTERISTICS

Rated frequency (Hz)	50
Rated voltage (V)	220
Calibration current (A)	7.5
Voltage current ratio	18.5 ± 0.5 percent
Power factor	0.04 ± 0.002

DIMENSIONS

(All dimensions in millimetres)

OVERALL LENGTH (Max) <i>L</i>	BULB DIAMETER (Max) <i>D₁</i>	NECK DIAMETER (Max) <i>D₂</i>	NECK LENGTH (Min) <i>L₁</i>
(1)	(2)	(3)	(4)
410.0	181.0	66.0	70.0

LUMINOUS FLUX

BULB FINISH	RATED LUMINOUS FLUX (Lumens)
(1)	(2)
Fluorescent coated	58 000
Clear	50 500

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